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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/666,340

09/17/2003

Hisashi Tsukamoto

Q137-US4

8397

31815 7590 03/07/2007  
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EXAMINER

YUAN, DAH WEI D

ART UNIT

PAPER NUMBER

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/666,340

Applicant(s)

TSUKAMOTO ET AL.

Examiner

Dah-Wei D. Yuan

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 29-33 and 71-83 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29,31-33,71-75,77-81 and 83 is/are rejected.
- 7) ☒ Claim(s) 30,76 and 82 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date  
:09172003,03012004,05102004,07092004.

**ELECTRIC STORAGE BATTERY CONSTRUCTION  
AND METHOD OF MANUFACTURE**

Examiner: Yuan

S.N. 10/666,340

Art Unit: 1745

February 28, 2007

***Election/Restrictions***

1. Applicant's election without traverse of Group II-1, claims 29-33, in Paper filed December 20, 2006 is acknowledged. Claims 1-28,34-65 were canceled. Claims 71-83 were added.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 82 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 82 recites the limitation "first electrode strip" and "second electrode strip" in Line 2. There is insufficient antecedent basis for these limitations in the claim.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 29,31,32,71-74,77,79,80,81,83 are rejected under 35 U.S.C. 102(b) as being anticipated by Teramoto et al. (US 5,501,916).

With respect to claim 29,71,72,80,83, Teramoto et al. teach a lithium battery comprising an aluminum hollow tube (48, electrically conductive, elongate pin), a set screws (49,50, an elongate mandrel) mounted on at least portion of the tube, and a spiral-shaped electrode. The electrode further comprises a negative electrode, a positive electrode welded to the hollow tube via an aluminum lead (52) and a separator disposed between the negative electrode and the positive electrode. See Figure 9, Column 1, Lines 13-28, Column 8, Lines 36-67.

With respect to claim 31, Teramoto et al. teach the hollow tube is extended beyond the spiral roll to form a battery terminal. See Figure 9.

With respect to claim 32, it is noted that the claim is product-by-process claims. “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since Teramoto’s battery is similar to that of the Applicant’s, Applicant’s process is not given patentable weight in this claim.

With respect to claim 73, Teramoto et al. teach the current collector is positioned between the screws and the hollow tube as shown in Figure 9.

With respect to claim 74, Teramoto et al. teach the positive electrode is welded to the elongate aluminum pin. See Figure 9.

With respect to claim 77, it is noted that the claim is product-by-process claims. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Since Teramoto's battery is similar to that of the Applicant's, Applicant's process is not given patentable weight in this claim.

With respect to claim 79, the screws can be considered as a tube because it is hollow.

With respect to claim 81, the screws would have a c-shaped cross-section along the longitudinal direction of the elongate aluminum tube.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto et al. (US 5,501,916) as applied to claims 29,31,32,71-74,77,79,80,81,83 above, and further in view of Nemoto et al. (US 6,387,561).

Teramoto et al. teach a lithium battery as described above in Paragraph 5. However, Teramoto et al. do not disclose the mounted mandrel has a channel through which electrolyte can be injected. Nemoto et al. teach a lithium battery wherein the top of the pin is used for the injection and/or extraction of the electrolyte solution. As a result, splash of the electrolyte solution is suppressed and impregnation of the electrolyte solution can concretely start from the end surface at the bottom part of the internal electrolyte body. See Column 12, Lines 37-46, Column 13, Lines 1-9. Therefore, it would have been obvious to one of ordinary skill in the art to use the opening in the mandrel to inject the electrolyte onto the battery of Teramoto, because Nemoto et al. teach the use of a nozzle in the pin to suppress the splash of the electrolyte solution.

8. Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto et al. (US 5,501,916) as applied to claims 29,31,32,71-74,77,79,80,81,83 above, and further in view of Cogan (US 5,755,759).

Teramoto et al. teach a lithium battery as described above in Paragraph 5. However, Teramoto et al. do not disclose the use of PtIr alloy as the pin. Cogan teaches a biomedical device wherein the wire electrode is made of PtIr alloy because it can record or stimulate physiological function. See Column 3, Lines 43-56. Therefore, it would have been obvious to

one of ordinary skill in the art to use PtIr alloy as the pin onto the battery of Teramoto, because Conga teaches the alloy can be used in implantable medical device.

9. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teramoto et al. (US 5,501,916) as applied to claims 29,31,32,71-74,77,79,80,81,83 above, and further in view of Tagawa (US 5,882,815).

Teramoto et al. teach a lithium battery as described above in Paragraph 5. However, Teramoto et al. do not disclose the use of titanium or titanium alloy for the mandrel. Tagawa teach an electrode assembly wherein titanium alloy is used as the center pin because it is corrosion resistant and lightweight. See Column 3, Lines 1-12. Therefore, it would have been obvious to one of ordinary skill in the art to use titanium alloy as the mandrel onto the battery of Teramoto, because Tagawa teaches the titanium alloy is corrosion resistant and can reduce the weight of the battery.

***Allowable Subject Matter***

10. Claims 30,76,82 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 30 would be allowable because the prior art does not disclose or suggest the mandrel includes a longitudinal slot and the electrode strip in electrical communication with the pin extends through the mandrel slot. Claims 76 would be allowable because the prior art does not disclose or suggest the assembly further comprising a first end cap



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mounted on the pin, the first end cap including an electrical insulator, the pin extending through the electrical insulator and the pin is hermetically sealed to the electrical insulator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan  
February 28, 2007



DAH-WEI YUAN  
PRIMARY EXAMINER